Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-35. (Canceled)

36. (Currently Amended) A replication defective recombinant adenovirus comprising

ITR sequences,

an encapsulation sequence,

a heterologous DNA sequence, and

an E2 region,

wherein E4 genes, and optionally E1 and E3 genes, have been rendered non-functional by one or more modifications outside of the ~~E4~~ coding regions of the respective genes, and wherein the adenovirus is a human group C adenovirus.

37. (Currently Amended) The replication defective recombinant adenovirus according to claim 36, wherein the E4 genes, and optionally E1 and E3 genes, have been rendered non-functional by deletion of all or part of the promoter region for ~~E4~~ transcription of the respective genes.

38. (Currently Amended) The replication defective recombinant adenovirus according to claim 36 wherein the E4 genes, and optionally E1 and E3 genes, have been rendered non-functional by substitution of one or more bases in the ~~E4~~ respective genes.

39. (Currently Amended) The replication defective recombinant adenovirus according to claim 38, wherein the E4 genes, and optionally E1 and E3 genes, have been rendered non-functional by one or more genetic modifications within regions responsible for ~~E4~~ gene expression or transcriptional regulation, or both, of the respective genes.

40-42. (Canceled)

43. (New) A human embryonic kidney 293 cell line, which in addition to the human adenovirus Ad5 genes present in a human embryonic kidney 293 cell itself, comprises integrated into its genome additional adenoviral genes,

wherein the additional adenoviral genes are E4 genes from a human group C adenovirus under control of an inducible promoter, and expression of the E4 genes would complement defective replication of a group C adenovirus whose genome has a deleted E4 region, and

wherein the additional adenoviral genes and the human Ad5 genes are the only adenoviral genes in the cell line.

44. (New) A human embryonic kidney 293 cell line, which in addition to the human adenovirus Ad5 genes present in a human embryonic kidney 293 cell itself, comprises integrated into its genome, additional adenoviral genes,

wherein the additional adenoviral genes consist of:

1) E4 genes from a human group C adenovirus under control of an inducible promoter, and expression of the E4 genes would complement defective replication of a group C adenovirus whose genome has a deleted E4 region; and

2) an E2 gene from a human group C adenovirus, which E2 gene encodes the 72K protein and is under control of an inducible promoter, and

wherein the additional adenoviral genes and the human Ad5 genes are the only adenoviral genes in the cell line.

45. (New) A replication defective recombinant adenovirus comprising:

ITR sequences,

an encapsulation sequence, and

a heterologous DNA sequence,

wherein E1 and E4 genes have been rendered non-functional, and wherein the adenovirus is a human group C adenovirus.

46. (New) The replication defective recombinant adenovirus according to claim 45, wherein the heterologous DNA sequence is selected from the group consisting of a therapeutic gene and a gene encoding an antigenic peptide.

47. (New) The replication defective recombinant adenovirus according to claim 46, wherein the heterologous DNA is a therapeutic gene which encodes a product selected from the group consisting of an enzyme, a blood protein, a hormone, a lymphokine, a growth factor, a neurotrophic factor, an apolipoprotein, a dystrophin, a minidystrophin, a tumor suppressor, and a coagulation factor.

48. (New) The replication defective recombinant adenovirus according to claim 45, wherein the heterologous DNA is an antisense sequence that is transcribed into an antisense RNA, which is complementary to a cellular mRNA, and wherein the antisense RNA blocks translation of the cellular mRNA into protein in an infected cell.

49. (New) The replication defective recombinant adenovirus according to claim 46, wherein the heterologous DNA encodes an antigenic peptide which generates an immune response against a microorganism, a tumor, or a virus when introduced into a human.

50. (New) The replication defective recombinant adenovirus according to claim 49, wherein the heterologous DNA encodes an antigenic peptide which generates an immune response against a virus selected from the group consisting of an Epstein-Barr virus, an HIV virus, a hepatitis B virus, and a pseudorabies virus when introduced into a human.

51. (New) The replication defective recombinant adenovirus according to claim 46, wherein the heterologous DNA sequence further comprises a sequence which permits expression of the heterologous DNA sequence in an infected cell.

52. (New) The replication defective recombinant adenovirus according to claim 46, wherein the heterologous DNA sequence further comprises a signal sequence, which directs a product encoded by the heterologous DNA sequence into a secretory pathway of a target cell.

53. (New) The replication defective recombinant adenovirus of claim 45, wherein E3 genes have been rendered non-functional.

54. (New) The replication defective recombinant adenovirus according to claim 53, wherein the heterologous DNA sequence is selected from the group consisting of a therapeutic gene and a gene encoding an antigenic peptide.

55. (New) The replication defective recombinant adenovirus according to claim 54, wherein the heterologous DNA is a therapeutic gene which encodes a product selected from the group consisting of an enzyme, a blood protein, a hormone, a lymphokine, a growth factor, a neurotrophic factor, an apolipoprotein, a dystrophin, a minidystrophin, a tumor suppressor, and a coagulation factor.

56. (New) The replication defective recombinant adenovirus according to claim 53, wherein the heterologous DNA is an antisense sequence that is transcribed into an antisense RNA, which is complementary to a cellular mRNA, and wherein the antisense RNA blocks translation of the cellular mRNA into protein in an infected cell.

57. (New) The replication defective recombinant adenovirus according to claim 54, wherein the heterologous DNA encodes an antigenic peptide which generates an immune response against a microorganism, a tumor, or a virus when introduced into a human.

58. (New) The replication defective recombinant adenovirus according to claim 57, wherein the heterologous DNA encodes an antigenic peptide which generates an immune response against a virus selected from the group consisting of an Epstein-Barr virus, an HIV virus, a hepatitis B virus, and a pseudorabies virus when introduced into a human.

59. (New) The replication defective recombinant adenovirus according to claim 54, wherein the heterologous DNA sequence further comprises a sequence which permits expression of the heterologous DNA sequence in an infected cell.

60. (New) The replication defective recombinant adenovirus according to claim 54, wherein the heterologous DNA sequence further comprises a signal sequence, which directs a product encoded by the heterologous DNA sequence into a secretory pathway of a target cell.

61. (New) A replication defective recombinant adenovirus comprising:

ITR sequences,

an encapsulation sequence, and

a heterologous DNA sequence,

wherein E1 and E2A genes, and optionally E4 genes, have been rendered non-functional, and wherein the adenovirus is a human group C adenovirus.

62. (New) The replication defective recombinant adenovirus according to claim 61, wherein the heterologous DNA sequence is selected from the group consisting of a therapeutic gene and a gene encoding an antigenic peptide.

63. (New) The replication defective recombinant adenovirus according to claim 62, wherein the heterologous DNA is a therapeutic gene which encodes a product selected from the group consisting of an enzyme, a blood protein, a hormone, a lymphokine, a growth factor, a neurotrophic factor, an apolipoprotein, a dystrophin, a minidystrophin, a tumor suppressor, and a coagulation factor.

64. (New) The replication defective recombinant adenovirus according to claim 61, wherein the heterologous DNA is an antisense sequence that is transcribed into an antisense RNA, which is complementary to a cellular mRNA, and wherein the antisense RNA blocks translation of the cellular mRNA into protein in an infected cell.

65. (New) The replication defective recombinant adenovirus according to claim 62, wherein the heterologous DNA encodes an antigenic peptide which generates an immune response against a microorganism, a tumor, or a virus when introduced into a human.

66. (New) The replication defective recombinant adenovirus according to claim 65, wherein the heterologous DNA encodes an antigenic peptide which generates an immune response against a virus selected from the group consisting of an Epstein-Barr virus, an HIV virus, a hepatitis B virus, and a pseudorabies virus when introduced into a human.

67. (New) The replication defective recombinant adenovirus according to claim 62, wherein the heterologous DNA sequence further comprises a sequence which permits expression of the heterologous DNA sequence in an infected cell.

68. (New) The replication defective recombinant adenovirus according to claim 62, wherein the heterologous DNA sequence further comprises a signal sequence, which directs a product encoded by the heterologous DNA sequence into a secretory pathway of a target cell.

69. (New) A cell line comprising, integrated into its genome, adenovirus genes necessary to complement the replication defective recombinant adenovirus according to claim 45, wherein the E1 gene is under the control of its own promoter and the E4 gene is under the control of an inducible promoter.

70. (New) The cell line according to claim 69, further comprising a glucocorticoid receptor gene.

71. (New) The cell line according to claim 69, wherein the inducible promoter is an LTR promoter of MMTV.

72. (New) The cell line according to claim 69, wherein the cell line is constructed from human embryonic kidney cell line 293.

73. (New) A cell line comprising, integrated into its genome, adenovirus genes necessary to complement the replication defective recombinant adenovirus according to claim 53, wherein the E1 gene is under the control of its own promoter and the E3 and E4 genes are under the control of an inducible promoter.

74. (New) The cell line according to claim 73, further comprising a glucocorticoid receptor gene.

75. (New) The cell line according to claim 73, wherein the inducible promoter is an LTR promoter of MMTV.

76. (New) The cell line according to claim 73, wherein the cell line is constructed from human embryonic kidney cell line 293.

77. (New) A cell line comprising, integrated into its genome, adenovirus genes necessary to complement the replication defective recombinant adenovirus according to claim 61, wherein the E1 gene is under the control of its own promoter, the E2A gene is

under the control of an inducible promoter, and optionally the E4 gene is under the control of an inducible promoter.

78. (New) The cell line according to claim 77, further comprising a glucocorticoid receptor gene.

79. (New) The cell line according to claim 77, wherein the inducible promoter is an LTR promoter of MMTV.

80. (New) The cell line according to claim 77, wherein the cell line is constructed from human embryonic kidney cell line 293.

81. (New) A composition comprising the replication defective recombinant adenovirus according to claim 36 and a pharmaceutically acceptable vehicle.

82. (New) A composition comprising the replication defective recombinant adenovirus according to claim 45 and a pharmaceutically acceptable vehicle.

83. (New) A composition comprising the replication defective recombinant adenovirus according to claim 53 and a pharmaceutically acceptable vehicle.

84. (New) A composition comprising the replication defective recombinant adenovirus according to claim 61 and a pharmaceutically acceptable vehicle.